JTIDS/MIDS

SPECTRUM USERS GUIDE

Prepared for

Program Executive Officer, Space, Communications and Sensors

Advanced Tactical Data Links Systems

PEO-SCS / PMW-159

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Prepared by

The Department of Defense Link-16 Spectrum

Certification Integrated Product Team

This document is releasable to NATO member countries, Sweden, Switzerland, Finland, Austria, Japan, Australia, New Zealand, Singapore, Republic of Korea, Israel, Thailand, Malaysia and the Philippines.

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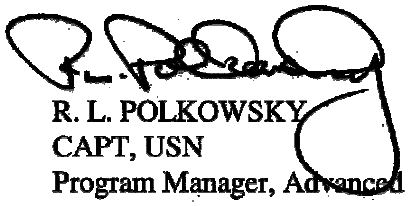
Acknowledgements

The Program Executive Office, Space, Communications and Sensors, Advanced Tactical Data Links Systems (PEO-SCS/PMW-159) is providing this JTIDS/MIDS Spectrum Users Guide (JSUG) to the Link 16 community. The guide details many complex spectrum related issues. Knowledge of these issues is necessary to comply with FAA restrictions on existing and future US & P frequency assignments. The JSUG will assist the Link 16 community to understand the restrictions and processes involved with a frequency assignments. As part of the JTIDS/MIDS operational planning process and to aid in compliance with frequency assignment restrictions, the deconfliction process is also explained.

The JSUG was prepared by the JTIDS/MIDS Spectrum Certification Integrated Product Team (IPT) as a result of fleet inquiries and questions fielded at recent Link 16 User Conferences regarding Link 16 and spectrum compliance. A myriad of Link 16 technical experts participated in the preparation of this guide. They include: PEO-SCS/PMW-159, NAVEMSCEN, JSC, JNDL, USAF ACC, Army CE Services, SPAWAR System Center, and NCTSI. The information contained in this guide will continue to be updated as final 100/50 US & P spectrum certification is achieved.

The following JTIDS/MIDS Spectrum Certification IPT members are commended for their individual contributions to this document: Mr. Kurt Nahser, Mr. Steve Gozzo, Mr. John Ashley, Mr. Tom Downie, Mr. Joe Kolesar, Mr. Mike Horrocks, Mr. Neal Hesser, Lt Col Bill Bayer, Ms. Cathy Nicholson, Mr. Wayne Markel, Mr. Greg Tschupp, Mr. Dan Slack, Mr. Huan Tong, Mr. Ron Nelson, Mr. Dave Hill, CDR Marshall Narverson, LCDR Jeff Dunlap, Mr. Hank Beard, Mr. John Patrick, Mr. Jack Smithmyer, Mr. Les Skews, Mr. Mike Williams, Mr. Dave Segerstrom, Ms. Linda Jacobsen, Mr. Bob Weaver, and, the driving force behind this group, Mr. Tien Ngo, Chairman of the Spectrum IPT.

Comments and constructive feedback from the operational community on the content and structure of this guide is needed. Please submit your comments and suggestions to PEO-SCS/PMW-159 via the SPAWAR Link 16 Fleet Support web site (http://link16.spawar.navy.mil) or contact Mr. Tien Ngo at 619-524-7715, DSN 524



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CHAPTER 1 INTRODUCTION

INTRODUCTION

The Joint Tactical Information Distribution System/Multifunctional Information Distribution System (JTIDS/MIDS) Spectrum Users Guide provides the warfighter, Joint Task Force (JTF) planners, unit and staff organizations a familiarization and quick reference guide. The information included in this document covers general information on various JTIDS/MIDS spectrum topics that influence operations and must be considered as part of the operational planning process. If more detailed information is required, a reference section and point of contact list is included for further research.

JTIDS/MIDS terminals operate within the frequency band 960 to 1215 Megahertz (MHz) which is designated on a worldwide basis for aeronautical radionavigation. For the Department of Defense (DOD) to operate JTIDS/MIDS equipment within the United States and its Possessions (US & P) requires adherence to the operational restrictions and coordination procedures summarized in this guide.

PURPOSE

The purpose of this guide is to provide the JTIDS/MIDS users with a single document that details the current procedures for planning and conducting operations. Specifically, this document provides guidance to JTIDS/MIDS operators which leads them through the procedures involved when obtaining permission to radiate/operate. Understanding the procedures ensures users are aware of applicable JTIDS/MIDS restrictions and coordination requirements prior to beginning operations.

BACKGROUND

JTIDS/MIDS staff planners and operators must be aware of the complex issues associated with the JTIDS/MIDS equipment operation within the 960 - 1215 MHz frequency band. A brief discussion of these issues follows.

The 960 - 1215 MHz Band

JTIDS/MIDS terminals operate in the 960 - 1215 MHz band, which is reserved on a worldwide basis for the safe operation of aeronautical radionavigation equipment. JTIDS/MIDS is compatible with these systems. Users, however, must adhere to several restrictions or limitations placed on JTIDS/MIDS operations.

Federal Aviation Administration (FAA)

The Federal Aviation Administration (FAA) is the designated administrator of the 960 - 1215 MHz band and is responsible for ensuring all equipment operating in the band is electromagnetically compatible. The responsibility for safety of flight is serious and operations within this band come under considerable scrutiny.

Department of Defense

Since JTIDS started operation in the 960 - 1215 MHz band, the DOD has successfully demonstrated JTIDS compatibility with aeronautical radio navigation equipment. The FAA has reduced restrictions on JTIDS operations in incremental steps as DOD's ability to manage and control day-to-day JTIDS operations has been demonstrated. A top DOD priority is the continued easing of JTIDS' restrictions regarding support training and operations.

CHAPTER 2 JTIDS/MIDS RESTRICTIONS

JTIDS/MIDS restrictions are contained in Interdepartment Radio Advisory Committee (IRAC) Documents 21167 (1979), 27439 (1991) and 28843 (1994). In general, each document contains the limits placed on operations and describes the easing of operational restrictions. These restrictions apply to the Military Services, Joint Staff, combatant commands, and those activities and agencies reporting to the Chairman of the Joint Chiefs of Staff which operate JTIDS/MIDS equipped systems within 200 nautical miles (nm) of the coastal US & P. The restrictions also apply to any military unit from a foreign nation and/or coalition force operating with US forces and within 200 nm of the coastal US & P.

Typical JTIDS/MIDS Restrictions

The restrictions listed below are typical of a temporary JTIDS/MIDS frequency assignment. They are provided as guidelines for requesting a temporary JTIDS frequency assignment. Users should verify, through their respective frequency manager chain of command, what the actual restrictions are for their respective operations area. The restrictions contained in a specific frequency assignment for a particular area always take precedence. Operational requirements above these restrictions are possible, but must be submitted with sufficient justification and are handled on a case-by-case basis.

Geographic Area

- No more than 100 percent Time Slot Duty Factor (TSDF) within a 200 nautical mile (nm) radius circle drawn around each JTIDS/MIDS terminal.
- TSDF at 100 % is defined as 396,288 pulses per 12-second frame, regardless of number of pulses per time slot (not necessarily 100 percent of time slots).

Note: TSDF is based on assigned time slots, regardless of whether transmission occurs.

TSDF Limitations for Individual Terminals

For prime control/relay aircraft operating above 18,000 feet:

- No more than 50 % TSDF can be assigned to any individual terminal
- Must be at least 3 nm from any other aircraft

For all other platforms no more than 20 % TSDF can be assigned to any individual terminal.

Multinet Operations

Multinet operations are permitted, provided that Geographic Area restriction (100 percent TSDF in 200 nm circle) is not exceeded.

Message Structures

Use of all message structures (72, 258 and 444 pulses per time slot) is permitted, provided the geographic area restriction is not exceeded.

Adjacent Time Slots

Transmission in adjacent time slots is permitted.

Contention Transmissions

No contention transmissions are permitted, except for Round Trip Timing (RTT) and the FAA modifications below.

- The FAA has reduced this restriction to permit: Initial Net Entry/ Precise Participant Location and Identification (PPLI) and Fighter-to-Fighter messages

Restrictions Near DME/P Beacons

No Precision Distance Measuring Equipment (DME/P) beacons are operational at this time. If the DME/P system becomes operational then:

- No JTIDS/MIDS transmissions will be allowed within radio line-of-sight (LOS) of operational DME/P beacons

Note: LOS is approximately 225 nm for aircraft at 25,000 feet (ft).

Restrictions Near Mode S Sensors

Surface-based JTIDS/MIDS terminals shall be located such that the Mode Select (Mode S) sensor will be protected from JTIDS/MIDS signals that exceed a peak power level of -22 dBm (decibels relative to a milliwatt) at the Mode S sensor receiver input.

- Table 4-1, JTIDS/MIDS Distance Separation Requirements, contains a worst case theoretical JTIDS/MIDS to Mode S sensor antennas main beam to main beam gain conversion of the - 22 dBm signal level. Closer distances are possible, but a specific site analysis would be necessary

No restriction on airborne JTIDS/MIDS terminals.

Restrictions Near TACAN/DME Beacons

Surface-based JTIDS terminals shall be located such that Tactical Air Navigation (TACAN) and Conventional Distance Measuring Equipment (DME/N) beacons will be protected from JTIDS signals that exceed a peak power level of - 33 dBm at the beacon receiver input.

- Table 4-1, JTIDS/MIDS Distance Separation Requirements, contains a worst case theoretical JTIDS/MIDS to ATC equipment antennas main beam to main beam gain conversion of the - 33 dBm signal level. Closer distances are possible, but a specific site analysis would be necessary
- No more than a total of 50 % TSDF permitted within a 7 nm radius of TACAN/DME beacons (This is known as the "Little r" restriction)

Restrictions Near Air Traffic Control Radar Beacon System (ATCRBS)/Identification Friend or Foe (IFF)

Surfaced-based JTIDS terminals shall be located such that Air Traffic Control Radar Beacon System / Identification Friend or Foe interrogators will be protected from JTIDS signals that exceed a peak power level of - 20 dBm at the interrogator receiver input.

- Table 4-1, JTIDS/MIDS Distance Separation Requirements, contains a worst case theoretical JTIDS/MIDS to ATC equipment antennas main beam to main beam gain conversion of the - 20 dBm signal level. Closer distances are possible, but a specific site analysis would be necessary

No restriction on airborne JTIDS/MIDS terminals.

Output Power

JTIDS/MIDS terminals are limited to a maximum of 200 WATTS + 1 dB at the terminal transmitter antenna output port.

Electromagnetic Compatibility (EMC) Features

EMC features must be operational.

CHAPTER 3 OUTLOOK AND RESTRICTION GOALS

Significant progress has been made in ongoing discussions between the National Telecommunications and Information Administration (NTIA) / FAA and DOD to ease restrictions on JTIDS/MIDS operations. The following are near term restriction goals. ***They are not the current restrictions!***

- Full 100/50 TSDF
- Unrestricted multiple nets
- 100 % TSDF for a Geographic Area with a 100 nm radius
- 50 % TSDF for individual terminals
- 230 feet from all beacons *****
- 900 -1500 feet from ATCRBS interrogators *****
- 16 kb (kilobit) voice authorization
- Elimination of the "Little r" 7 nm restriction
- All access modes (includes contention)
- 900 - 1500 feet to Mode S sensors *****

(*) Platform dependent and is determined by the received signal level at the ATC equipment receiver. See Table 4-1 **of this guide**.

CHAPTER 4 PLANNING THE USE OF JTIDS/MIDS EQUIPMENT

JTIDS/MIDS users are responsible for the following steps prior to using JTIDS/MIDS equipment. Someone or some organization must accept responsibility for executing these actions. The service instruction and directive provides information defining those roles and responsibilities. The necessary steps are briefly discussed below. Further detail is located throughout this guide.

STEPS FOR PLANNING THE USE OF JTIDS/MIDS EQUIPMENT

Step 1 Verify a Frequency Assignment Exists

Confirm with the respective base, post, or installation frequency manager that a JTIDS/MIDS frequency assignment exists for the intended area of operations. If there is no assignment, the process for obtaining one is the same as for any other radiating system, which is described in Step 3 below. Once a frequency assignment is granted, it is considered permissible to radiate if operations in the affected area have been deconflicted, but only under the conditions contained in the pertinent frequency assignment.

Step 2 Know the Basic JTIDS/MIDS Restrictions

The restrictions covered in Chapter 2 are typical JTIDS/MIDS operating restrictions. JTIDS/MIDS equipment operators must be aware of the applicable restrictions for their operation. Table 4-1, JTIDS/MIDS Distance Separation Requirements, contains nautical miles distances that guarantee received signal strength for authorized platforms. The section titled "Required Separation Distances from ATC Equipment," which is located within this chapter contains the necessary conversion of received signal strength into nautical miles for each platform authorized to operate JTIDS/MIDS. Compliance with the restrictions shall not be compromised. This is also the official DOD position.

Step 3 Obtain a Frequency Assignment

If a frequency clearance does not exist in the desired area of operations or requirements exceed the existing frequency assignment, then a JTIDS/MIDS frequency assignment must be obtained. The next section, Frequency Assignment Process, lists the minimum information required when submitting a JTIDS/MIDS frequency assignment request. Any supporting information or justification assists the frequency manager in processing your request. Timeliness is very important because it can take up to 90 days to process a JTIDS/MIDS frequency assignment request. Do not let previous levels of authorization dictate the request. Identify the specific JTIDS/MIDS requirements for the present situation.

Note: Before a temporary JTIDS/MIDS frequency assignment request will be accepted and process it MUST have a Deconfliction Server Scheduling Number. See Chapter 6 for obtaining a Deconfliction Server Scheduling Number.

Step 4 Know the Restrictions in the Frequency Assignment

The FAA, as the band administrator, is authorized to reduce the restrictions should it determine justification exists. It is possible the restrictions contained in a specific frequency assignment may provide more operational flexibility than the restrictions contained in the IRAC documents. For example, the FAA sometimes permits TSDFs in excess of 100/50 for large-scale exercises. Therefore, always check the specific restrictions contained in your frequency assignment.

Step 5 Deconflict Your Operations

The deconfliction requirement is identified in every frequency assignment. Each frequency assignment makes reference to the Chairman of the Joint Chiefs of Staff (CJCSI) 6232.01A for deconflicting JTIDS/MIDS operations. Deconfliction coordinators are appointed by their respective Service. The responsibilities of each coordinator are listed in Chapter 6.

FREQUENCY ASSIGNMENT PROCESS

A frequency assignment for the use of JTIDS/MIDS terminals in the US & P can take up to 90 days to process. Allow sufficient lead time in submitting the required paperwork. Failure to plan ahead may result in not obtaining the assignment prior to the required date or scheduled operation.

Submitting a JTIDS/MIDS Frequency Assignment Request

The first step in submitting a JTIDS/MIDS frequency assignment request is to identify the requirements. The following explains the minimum information needed.

- **Who** - Point of Contact and phone number
- **When** - Duration (date and Zulu time)
- **Where** - location (Warning/restricted/Airborne Early Warning (AEW) orbit areas or the latitude/longitude (lat/long) for a specific Geographic Area)

(Note: Ensure the request remains at the UNCLASSIFIED level.)

- **Required Time Slot Duty Factor (TSDF)** - TSDF percentage for network and maximum for any one platform (e.g., 100/50)
- **Stop Buzzer** - Point of Contact (POC) and 24 hour accessible phone number
- **Platforms participating** - (e.g., F-14, F-15, E-3, Aegis, Patriot)

- **JTIDS/MIDS Voice requirements -** Request and justification
- **Proximity to Mode S Sensors, ATCRBS Interrogators and DME Beacons** - If applicable. This information is only required if a unit is not able to meet the separation distances contained in Table 4-1 of this guide.
- **JTIDS/MIDS Deconfliction Scheduling Number** - (e.g., 2000-03-09 18:31:03) (For temporary frequency assignment requests only)

Where to Submit the Request

In the Air Force, the request is submitted to the installation spectrum manager who forwards it directly to the MAJCOM spectrum manager.

In the Army, the request is submitted to the post frequency manager, who then sends it directly to Army Communications Electronics (CE) Services.

For the Navy, the request is submitted through the base or installation frequency manager to the regional Area Frequency Coordinator (AFC), with an information copy to the respective Commander in Chief Atlantic (CINCLANT) / Commander in Chief Pacific (CINCPAC), deconfliction coordinator and Naval Electromagnetic Spectrum Center (NAVEMSCEN).

For visiting non-US JTIDS/MIDS platforms operating within the US & P, requests should be forwarded to the hosting US Service which then follows the respective steps mentioned above.

For more information, see Figure 4-1, Steps for JTIDS/MIDS Equipment Use.

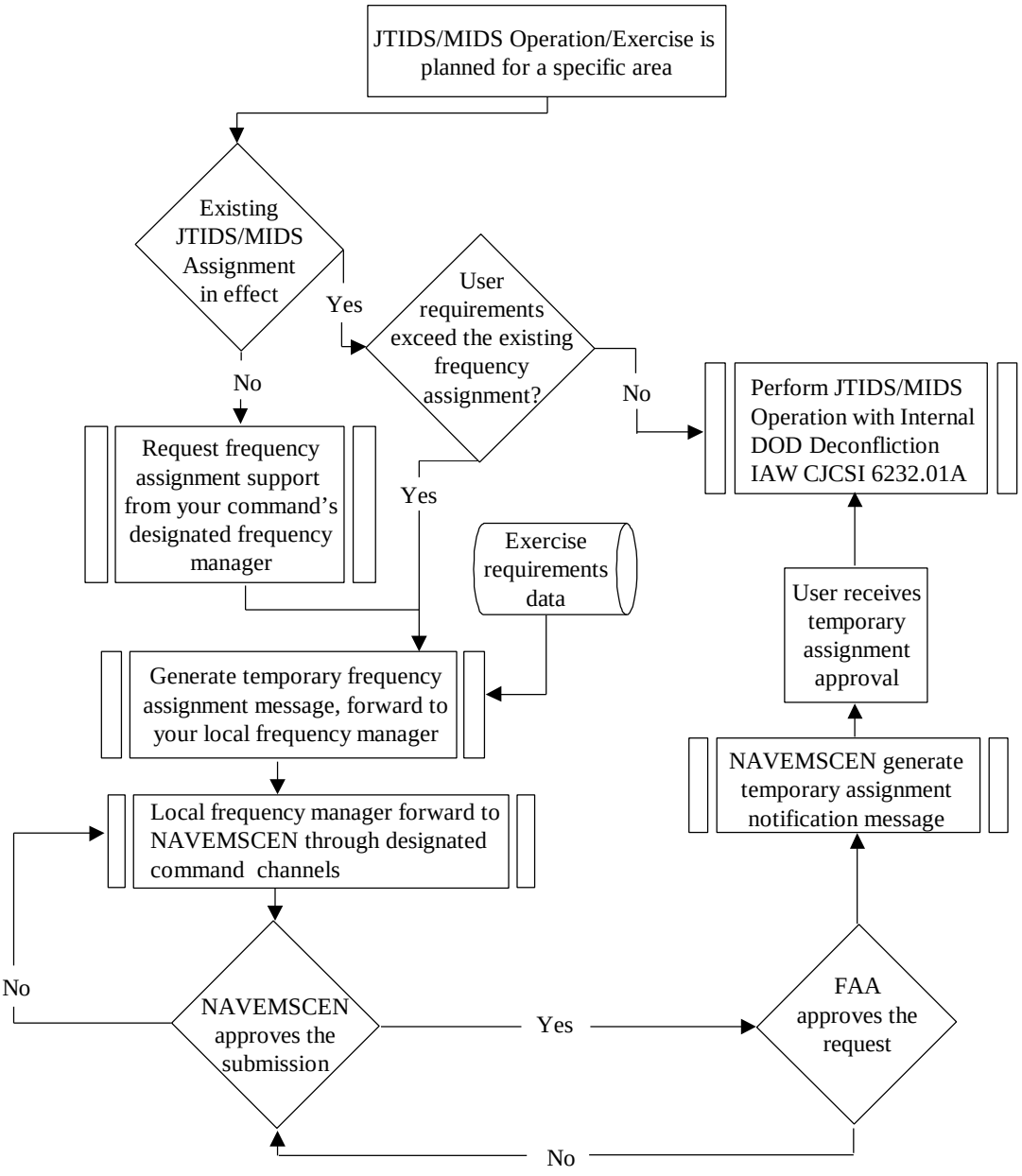


Figure 4-1 Steps for JTIDS/MIDS Equipment Use

OPERATIONS

Training

Day-to-day JTIDS/MIDS operations are easily accomplished as long as a frequency assignment is in place with sufficient "capabilities" (i.e., TSDF). Units must accomplish deconfliction in accordance with CJCSI 6232.01A. Accessing the deconfliction server allows a unit to schedule operations, identify potential training partners and deconflict with other scheduled operations. Users must be aware of the frequency assignment limitations to ensure planned operations' use do not exceed either the area of operations TSDF or restrictions.

Exercises

Large exercises may exceed the existing assignment used for normal day-to-day training. Accordingly, as part of the exercise planning, the preparation and submission of a special temporary assignment request is required. Lead times for handling the request may take up to 90 days. The JTIDS Network Design Library (JNDL) or the lead service preparing the network output for the exercise can assist in determining which technical requirements should be included in the request.

Contingencies

Contingencies are special because they are unannounced and typically occur outside the 200 nm US & P coastal waters. They require special coordination, depending on where the operation takes place. See the international section (Chapter 7) of this guide for further assistance.

REQUIRED SEPARATION DISTANCES FROM ATC EQUIPMENT

Table 4-1 shows the worst case standoff distances from ATC equipment which are required for various JTIDS/MIDS platforms. This information has two purposes. First, determine if it is possible to maintain the standoff distance indicated in Table 4-1. If so, then the distance indicated is used as the minimum required separation distance from the ATC equipment. Second, if the operational requirements cannot be maintained by the separation distance indicated in Table 4-1, then a request for restriction easing might be obtained. During this process NAVEMSCEN performs a site analysis for the requested operation. A significant reduction in the separation distance may be possible, but this is on a case-by-case basis so the received signal level into the ATC equipment does not exceed the IRAC limitations. The distances indicated in Table 4-1 are worst case theoretical JTIDS/MIDS to ATC equipment antennas main beam-to-main beam gain conversion. The following subparagraphs contain general considerations to use when planning where to place JTIDS/MIDS platforms. Note: With respect to the restrictions mentioned above, the term "surface" refers to both ground based and maritime platforms.

Ground

Ground based platforms can be the most difficult to maintain sufficient separation from ground based ATC equipment. Caution should be observed with respect to the height of the antenna and the range and bearing from the ATC equipment. See Table 4-1.

Maritime

The required JTIDS/MIDS separation distances from civilian ATC equipment are essentially the same for maritime operations as those of the ground platforms. Since maritime units are mobile, they must consider all ATC equipment that may come within Radio Line of Sight (RLOS). See Table 4-1.

Airborne

The distance separation guidelines presented in Table 4-1 for JTIDS/MIDS equipped aircraft platforms are applicable only when these aircraft are operating on the ground (e.g., various runways and taxiways). There are no separation requirements (from ground-based ATC equipment) for airborne aircraft. There are, however, special altitude and air-to-air restrictions that need to be observed.

Altitude Considerations

Prime control and/or relay aircraft operating above 20 % TSDF may do so only above 18,000 feet and must maintain 3 nm separation from all other aircraft.

Table 4 - 1 JTIDS/MIDS Distance (in nautical miles) Separation Requirements

Individual Platform	DME Beacons	TACAN Beacons	En Route ATCRBS	Terminal ATCRBS	En Route Mode S	Terminal Mode S
ATC Unit Receive Level Threshold (dBm)	- 33	- 33	- 20	- 20	- 22	- 22
ABCCC	0.48	0.48	0.94	0.50	1.28	0.64
ADCP	0.69	0.68	1.34	0.71	1.84	0.92
AST (767) (note 4)	0.43	0.42	0.83	0.44	1.13	0.57
AMDPCS	0.70	0.69	1.36	0.72	1.86	0.93

Table 4 - 1 JTIDS/MIDS Distance (in nautical miles) Separation Requirements						
Individual Platform	**DME Beacons**	**TACAN Beacons**	**En Route ATCRBS**	**Terminal ATCRBS**	**En Route Mode S**	**Terminal Mode S**
ATC Unit Receive Level Threshold (dBm)	**- 33**	**- 33**	**- 20**	**- 20**	**- 22**	**- 22**
ASIT/ADA/CRE	**0.60**	**0.59**	**1.17**	**0.62**	**1.60**	**0.80**
B - 1B	**0.64**	**0.63**	**1.24**	**0.66**	**1.69**	**0.85**
Boeing 737 (F22 Testbed, note 4)	**0.46**	**0.46**	**0.9**	**0.48**	**1.23**	**0.61**
C - 130	**0.59**	**0.58**	**1.14**	**0.61**	**1.56**	**0.78**
DC-9 (note 4)	**0.47**	**0.46**	**0.91**	**0.48**	**1.24**	**0.62**
DC-10 (note 4)	**0.43**	**0.42**	**0.83**	**0.44**	**1.13**	**0.57**
E - 2	**0.37**	**0.37**	**0.73**	**0.39**	**1.00**	**0.50**
E - 3	**0.59**	**0.59**	**1.16**	**0.61**	**1.58**	**0.79**
E - 8	**0.52**	**0.52**	**1.02**	**0.54**	**1.39**	**0.70**
F/A - 18	**0.50**	**0.50**	**0.98**	**0.52**	**1.34**	**0.67**
F - 14	**0.69**	**0.68**	**1.34**	**0.71**	**1.84**	**0.92**
F - 15	**0.52**	**0.52**	**1.02**	**0.54**	**1.39**	**0.70**
F - 16	**0.96**	**0.95**	**1.88**	**1.00**	**2.56**	**1.28**
G - 1	**0.41**	**0.41**	**0.80**	**0.43**	**1.09**	**0.55**
JLENS	**0.54**	**0.53**	**1.04**	**0.55**	**1.42**	**0.71**
JTAGS (note 3)	**0.70**	**0.69**	**1.36**	**0.72**	**1.86**	**0.93**
JVAN	**1.42**	**1.41**	**2.78**	**1.47**	**3.79**	**1.90**
King Air (note 4)	**0.71**	**0.7**	**1.38**	**0.73**	**1.88**	**0.94**
MCE/JM	**0.54**	**0.54**	**1.06**	**0.56**	**1.44**	**0.72**

Table 4 - 1 JTIDS/MIDS Distance (in nautical miles) Separation Requirements						
Individual Platform	**DME Beacons**	**TACAN Beacons**	**En Route ATCRBS**	**Terminal ATCRBS**	**En Route Mode S**	**Terminal Mode S**
ATC Unit Receive Level Threshold (dBm)	**- 33**	**- 33**	**- 20**	**- 20**	**- 22**	**- 22**
MEADS (note 3)	**0.70**	**0.69**	**1.36**	**0.72**	**1.86**	**0.93**
OPFAC/JTD	**0.90**	**0.89**	**1.75**	**0.93**	**2.39**	**1.20**
P - 3	**0.48**	**0.48**	**0.94**	**0.50**	**1.28**	**0.64**
PATRIOT	**0.70**	**0.69**	**1.36**	**0.72**	**1.86**	**0.93**
RC - 135	**0.44**	**0.44**	**0.86**	**0.46**	**1.17**	**0.59**
RMP (note 4)	**1.58**	**1.56**	**3.08**	**1.64**	**4.20**	**2.11**
S-3 (note 4)	**0.50**	**0.49**	**0.97**	**0.51**	**1.32**	**0.66**
SH - 60	**0.29**	**0.29**	**0.57**	**0.30**	**0.77**	**0.39**
SHIPS	**0.44**	**0.44**	**0.86**	**0.46**	**1.17**	**0.59**
SHORAD/ FAADC2I	**0.70**	**0.69**	**1.36**	**0.72**	**1.86**	**0.93**
SJS	**0.95**	**0.94**	**1.86**	**0.99**	**2.53**	**1.27**
SUBMARINE	**0.19**	**0.19**	**0.37**	**0.20**	**0.51**	**0.25**
TAOM/AOC	**0.60**	**0.59**	**1.16**	**0.62**	**1.59**	**0.80**
THAAD	**0.70**	**0.69**	**1.36**	**0.72**	**1.86**	**0.93**
TSC - 131	**0.77**	**0.76**	**1.50**	**0.80**	**2.05**	**1.03**
TYQ - 82	**0.89**	**0.88**	**1.73**	**0.92**	**2.36**	**1.18**
UAV	**0.43**	**0.42**	**0.83**	**0.44**	**1.13**	**0.57**
USG - 48	**0.54**	**0.53**	**1.04**	**0.55**	**1.42**	**0.71**

Link to Acronyms

Note 1: Distances are worst case theoretical JTIDS/MIDS to ATC equipment antennas main beam to main beam gain conversions. Distances are measured in nautical miles.

Note 2: Signal level with respect to the JTIDS/MIDS peak signal.

Note 3: Indicates preliminary information.

Note 4: Indicates that the platform has not been incorporated within the DD-1494 and therefore, with each occurrence of use, a specific authorization from the FAA is required. Once a platform is included in the DD Form 1494 it can operate anywhere where there is an existing JTIDS/MIDS frequency assignment.

Note 5: For the aircraft listed, these separation distances only apply to ground operations such as ramps, runways and taxiways.

CHAPTER 5 CALCULATING TSDF FOR A NETWORK

This chapter briefly explains the Time Slot Duty Factor and gives guidance for calculating platform and network TSDF. This calculation must be used when scheduling operations on the deconfliction server.

Networks are developed to meet operational, training, or testing needs based on the user requirements submitted to one of the four network design facilities. The design facilities turn the requirements into initialization loads that provide the terminal operating parameters used for the selected network. The information delivered with the initialization load includes the network description documentation, providing detail on how the network information exchange takes place. The documents are standardized and include the information needed to calculate TSDF (included in the Network Connectivity Matrix Table) as well as a TSDF Table with all of the participating platform TSDFs completed. If more information or assistance is needed when using the various description documents, contact the particular Service Network Design Facilities (NDF) or the JTIDS Network Design Library (JNDL).

The networks are composed of functional areas, called Network Participation Groups (NPGs), supporting the information exchange in such areas as surveillance, electronic warfare (EW), and mission management. Each NPG used in a network is subdivided into one or more slot blocks that may vary from one to hundreds of time slots in size. NPGs allocated for each network include the pulse transmission format. Once multiplied by the number of time slots, the pulse transmission format provides the information necessary to help manage network TSDF. The network description documentation provided by service design facilities, contains the necessary data to calculate platform and network total TSDF, thus aiding the user in complying with geographic area restrictions.

TIME SLOT DUTY FACTOR (TSDF)

TSDF was developed as a way of quantifying JTIDS transmissions. It is normally a two-factor number written as a fraction, e.g., 100/50. The first number represents the total percentage of potential pulses in a geographic area, and the second number represents the percentage of pulses that can be transmitted by the highest single user. Each TSDF number is based on the percentage of base value, which is represented by 396,288 pulses per 12 seconds. The example of 100/50 above would represent a geographic area where the total number of potential pulses is 396,288 (100 % of 396,288), and the highest single user is 198,144 pulses (50 % of 396,288). If a third number is included in the TSDF fraction (e.g., 100/50/20), the third number represents the highest TSDF percentage allowed for platforms operating below 18,000 feet, and the second number then represents the prime control/relay aircraft operating above 18,000 feet.

CALCULATING TSDF

TSDF is the measure by which pulse density is determined. Because of this, a basic understanding of how TSDF is calculated is necessary.

The connectivity matrix, also provided as part of the network description, contains all the necessary information to calculate TSDF. This matrix represents the 12-second frame and depicts all the unit's time slot assignments. Each time slot in a network can contain either 258 or 444 pulses. The third type of pulse count configuration is for RTT time slots that use 144 pulses. To calculate the unit TSDF, the number of assigned time slots is multiplied by the total number of pulses in each time slot, divided by 396,288 and then multiplied by 100. This provides the TSDF for a particular platform. The following formula illustrates the calculation:

TSDF = [(pulses per time slot x assigned time slots per frame) / 396,288] * 100

TSDF TABLE

When every network is published, the network designer provides a table, similar to Figure 5-1, in the network description document which contains the unit TSDF for all possible participants. These values are used to calculate both the area TSDF and the highest single user. Any platform variables, such as relay, are provided as separate values to allow maximum flexibility in calculating TSDF totals.

Unit	TSDF	Relay	Total
E-2C	18.2 %	9.0 %	27.2 %
CV	12.2 %		12.2 %
E-3	18.6 %	9.8 %	28.4 %
CRC	10.8 %		10.8 %
F-14	6.7 %		6.7 %
F-15	4.3 %		4.3 %

Figure 5-1 Network TSDF Table

TSDF RESTRICTIONS

Managing network TSDF allows compliance with IRAC restrictions which place various TSDF limitations on JTIDS/MIDS operations. The two most obvious are Geographic Area and "Little r." Geographic Area establishes the maximum number of pulses permitted within a geographic radius

around each JTIDS/MIDS terminal (currently 200 nm). "Little r" establishes the maximum number of pulses from JTIDS/MIDS surface-based terminals permitted within a radius (currently 7 nm) around TACAN/DME beacons.

To determine the TSDF within the present 200 nm geographic area, pick any terminal and add the unit TSDF to the unit TSDF of all the JTIDS terminals within a 200 nm radius. The sum TSDF becomes the first number and the highest single user within the 200 nm radius becomes the second. If the current geographic area restriction of 200 nm radius should change, the fundamental principle of calculating geographic area TSDF remains the same.

UNIT TSDF

Unit TSDFs are provided in the network description similar to Figure 5-1 above. The table encompasses all platform types that have been designed in the network. In cases where the network has more than one type of platform included, a separate line is added for each or a note is incorporated on calculating TSDF for additional participants of the same type. If the table is not provided, contact the JNDL or Service NDFs to obtain the appropriate TSDF tables or for assistance in manual calculation.

NETWORK TSDF

The network TSDF is calculated by adding the individual platform TSDFs. In some network tables, a network TSDF is provided but only applies when all platforms designed into the network are participating. In cases where less than the total numbers of platforms are participating, use the TSDFs only for the participating platforms.

As an example, the TSDF for a two-platform network is presented in Figure 5-2. The first platform is assigned 20 % of the available 396,288 pulses contained in a 12 second frame. The second platform is assigned 50 % of the available 396,288 pulses in the same 12-second frame. It is assumed all connectivity requirements of both platforms could be met by the allocation of the TSDF mentioned. The total TSDF in this hypothetical network is, therefore, 70 % with the single largest user assigned 50 %. This would represent a 70/50 TSDF network.

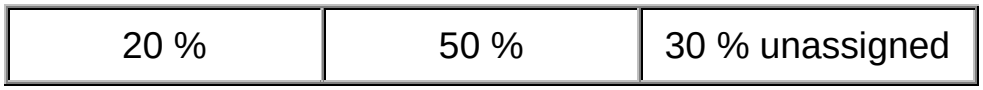


Figure 5-2 Two-platform TSDF Example

TSDF EXERCISE

The following exercise is provided for practice in using the network TSDF Table. The network TSDF table shown earlier in this chapter was reproduced for convenience. Using the following geographic layout it is determined that the highest (worst case) TSDF occurs when the Geographic Area radius is drawn around the CV. The E-2C acts as a relay and the 27.2 % value is used.

Therefore, the E-2C has the highest TSDF (E-3 will not be a relay).

Unit	TSDF	Relay	Total
E-2C	18.2 %	9.0 %	27.2 %
CV	12.2 %		12.2 %
E-3	18.6 %	9.8 %	28.4 %
CRC	10.8 %		10.8 %
F-14	6.7 %		6.7 %
F-15	4.3 %		4.3 %

Figure 5-1 (Repeated) Network TSDF Table

If all the units inside the area operate using this network in the location shown, the TSDF would be 79.8/27.2 with 79.8 being the total number of potential pulses and 27.2 being the highest single user.

27.2 + 12.2 + 18.6 + 10.8 + 6.7 + 4.3	=	79.8
27.2		27.2

Notes

1. The radius is drawn around the "CV" (worst case). A similar calculation can be done centered on any of the other units.
2. The calculation methodology remains the same regardless of whether or not all units in the design are present. If one unit were not present, its values would not be added in. If two F-15s were present, an additional 4.3 would be added to the total.
3. The units do not have to be operating within the same network to count as part of the TSDF total.

CHAPTER 6 GEOGRAPHIC AREA COORDINATION

The CJCSI 6232.01A, dated 1 June 1998, mandates the requirement for performing Geographic Area coordination (also known as pulse deconfliction) to satisfy pulse density restrictions. The NTIA restrictions also set forth the maximum pulse density permitted within a defined Geographic Area.

JTIDS NETWORK DESIGN LIBRARY

The JTIDS Network Design Library (JNDL) supports the Joint Chiefs of Staff (JCS) with pulse deconfliction. To accomplish this task, the JNDL is responsible for the following items.

- Provide Commander in Chiefs (CINCs), Services and Agencies (C/S/A) with a 24-hour point of contact to address all JTIDS/MIDS deconfliction requirements and technical, operational, and analytical support for pulse density deconfliction.
- Provide CINCs and Joint Force Commanders with a 24-hour point of contact for immediate JTIDS/MIDS network selection support.
- Coordinate technical, operational and analytical support with the appropriate Service JTIDS/MIDS network design facility to fulfill the operational requirements.
- Receive, store, and catalog all C/S/A JTIDS/MIDS networks.
- Assist the Joint Staff in developing pulse density deconfliction policies and monitoring execution policies to ensure compliance with restrictions for JTIDS/MIDS operations, exercises, and tests.
- Provide technical advice to the Joint Staffs Director for Command, Control, Communications and Computers (C4) Systems (J-6) Directorate) in accomplishing their pulse deconfliction responsibilities as outlined in CJCSI 6232.01A.
- Operate, maintain, and administer the JTIDS deconfliction server and assist users in its operation.

SERVICE DESIGNATED DECONFLICTION COORDINATOR

The deconfliction coordinator is a designated organization, unit, or individual tasked with the coordination of JTIDS/MIDS requirements within a specific Geographic Area. All JTIDS/MIDS operations are coordinated through a deconfliction coordinator. See Chapter 9 for a listing of the current Service designated coordinators. Coordinators schedule JTIDS/MIDS operations within a

Geographic Area, encompassing one or more frequency assignment authorization areas. The deconfliction coordinator's principle responsibilities include the following items.

- Be aAare of and understand the JTIDS/MIDS frequency assignments within his/her area of responsibility.
- Ensure all operations within the frequency assignment area are coordinated and satisfy pulse deconfliction restrictions.

JTIDS/MIDS frequency assignment information can be obtained from the local/area frequency manager.

Note: To use the on-line JTIDS/MIDS Deconfliction Server (JDS), deconfliction coordinators must obtain a login identification (ID) and password from the deconfliction server administrator. If the JDS is off-line, direct coordination using the Digital Switching Network (DSN) or commercial access is necessary. The telephone numbers for the JDS administrator are as follows: DSN: 367-3136, Commercial: 404-464-3136. (Requests for a login ID and password may be submitted through the server as well as the DSN and commercial telephone numbers.)

UNIT/STAFF COMMUNICATIONS PLANNERS

Planners of existing and future JTIDS/MIDS operations, exercises, training, and tests will complete the following tasks:

- Coordinate with the appropriate JTIDS/MIDS deconfliction coordinators to satisfy all frequency assignment authorization restrictions. JTIDS/MIDS deconfliction is similar to and may be done as part of the same process as coordinating air space or operations areas.
- Submit a temporary frequency assignment request, in accordance with existing frequency management directives, if a permanent JTIDS/MIDS frequency assignment does not exist or cannot support the mission for the desired area of operation.
- Ensure all participating JTIDS/MIDS forces are included in the coordination process and are briefed as to specific frequency assignment restrictions.

JTIDS DECONFLICTION SERVER

The deconfliction server at Forces Command (FORSCOM), a web-based database application, is for the deconfliction coordinators to schedule JTIDS/MIDS activity. Individual users may also access the server (viewing privileges only) to examine scheduled JTIDS/MIDS activities. The Worldwide Web server address is http://jndl.forscom.army.mil.

SCHEDULING

All JTIDS/MIDS operations are scheduled into the JTIDS deconfliction server. JTIDS/MIDS users or their representative POCs must ensure their TSDF requirements are given to the respective deconfliction coordinator in a timely manner. Only a designated service coordinator can schedule an operation into the server. Figure 6-1, Deconfliction Organization Relationships, shows the

relationship between the various organizations responsible for JTIDS/MIDS pulse deconfliction in accordance with the CJCSI 6232.01A.

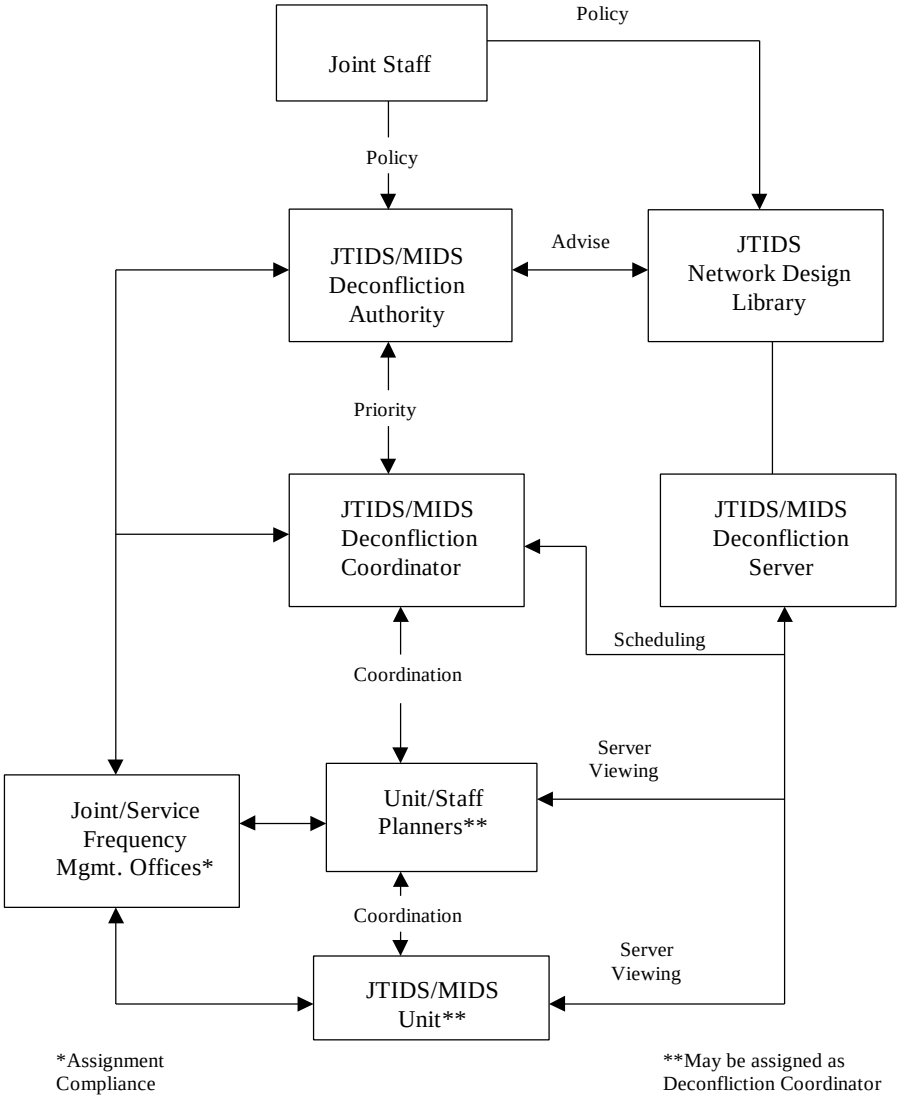


Figure 6-1 Deconfliction Organization Relationships

MANAGING A GEOGRAPHIC AREA

In managing a Geographic Area, the designated coordinator must remember all users have a requirement to operate JTIDS/MIDS equipment, and the coordinator must determine the user's current requirements. This means the coordinator must communicate with the users/requestors of JTIDS/MIDS operations, which could include a carrier group or a single unit. It is important to prioritize JTIDS/MIDS equipment use in a given Geographic Area. The following list assists in

identifying types of operations. Remember all aspects of the operation must be examined and judged on their merits. *This list does not suggest a priority but, rather, highlights aspects for consideration.*

- Work Ups - (Generally known months in advance) Done prior to deployment for units heading into areas where there may be potential hostilities. If this is not the case, the POC of the work ups should notify the coordinator.

- Joint or Combined Exercises - (Usually known well in advance) These exercises often have TSDF requirements and normally do not allow for any adjustments because of 24 hour operations.

- Single Service Exercises - (Typically known well in advance and possibly used for short notice deployment to a world "hot spot") The exercise POC must inform the coordinator of event needs. A 100/50 TSDF network assignment may not be needed at 100 % throughout the exercise. It is, therefore, important for the exercise or Service POC to maintain close contact with the coordinator to accommodate the needs of all users in a Geographic Area.

- Contractor Trials or Testing - (Characteristically known well in advance) Sometimes contractors or the people closest to the trial or test may not be aware of their responsibilities to coordinate their activities or test/schedule changes. This can cause short notice requirements that could be in conflict with those of the operational community. The best resolution of this problem is to schedule the requirement early. Although contractor trials or testing benefits the operator, any trial delays can have a cost impact to DOD. Therefore, coordinators must make every effort to provide the resources required. The contractor, however, must make the coordinator aware of the requirements as early as possible. Early notification gives the coordinator an option to move one operation further away or limit the TSDF for certain periods of time without an adverse impact on operations. The key is advance knowledge and communicating that information to the appropriate deconfliction coordinator.

- Routine Training - (Ongoing requirement with varying needs) Location often determines whether training is impacted by other JTIDS/MIDS operator requirements. Southern California (SOCAL), for example, is heavily congested. Scheduling difficulties are normal for routine training. On the other hand, training in Bath, Maine traditionally operates on a regular basis with few scheduling problems. Because assignment problems could occur in any location, it is incumbent upon all users to schedule early and accommodate other operator training needs.

- Safety/Search and Rescue - (Normally unscheduled and always highest priority) Safety always comes first. Any TSDF requirement for search and rescue efforts using JTIDS/MIDS equipment is granted. The organization or unit leading the search and rescue effort informs the designated coordinator(s) of the applicable area.

If point of contacts schedule requirements accurately, honestly, and in a reasonable time frame, but the requirements exceed the allowable TSDF authorization, a temporary frequency assignment in excess of 100/50 TSDF can be requested for the period necessary to accommodate all the users.

Although time consuming, this is an option.

A coordinator may also ask the POC of the requesting unit if a reduction in TSDF is possible for all or parts of the required time. For example, a carrier battle group doing work ups can have a 6 week 100/50 TSDF network requirement. During the same period, a Marine Air Control Squadron (MACS) unit can also have a two-week 100/50 TSDF assignment. Clearly the two are incompatible in the same Geographic Area (e.g., SOCAL). The coordinators should contact the POC of each operation determine the time when the full requirement (100/50 TSDF) is necessary. It is possible that the carrier battle group needs 100/50 TSDF for the last week or for selected intervals during the 6-week period. The MACS unit may need 100/50 TSDF for only 3 days. By working directly with the unit POCs, the coordinators may be able to work out a schedule that accommodates both requirements. The key is communication not only between the respective POCs and the coordinators, but also between the POCs themselves. The coordinators should assist in facilitating this discussion as soon as it has been determined a conflict exists.

If time does not permit requesting a temporary frequency assignment and the unit POC is not willing or able to reduce their requirement, then a coordinator must require a separation between the exercises or deny one exercise the permission to operate.

The separation of operations is based on two factors - time or distance. Utilizing the time factor, the only option available is to allow one operation authorization while the other operation must be silent. Obviously, this is an all or nothing approach. Failure to reach an agreement between the requesting unit POCs leaves the coordinator with little more than this option. The distance factor option is also difficult because the connectivity requirements typically needed between ground based units, airborne units and naval units means this option would also be very difficult to implement. The distance is currently based on the pulse density within a 200 nm radius around each terminal. Therefore, a coordinator might need to separate each operation by as much as 200 nm. It is a difficult task to move an entire operation to satisfy the pulse density requirements.

In conclusion, all users must identify their JTIDS/MIDS operational requirements to the respective coordinator in a timely manner. An operation might need a 100/50 TSDF frequency clearance for only a portion of the time the clearance was authorized. This provides some degree of flexibility for the coordinator to permit other users in the same Geographic Area. It is important that all users provide the coordinators with the best information available to successfully accomplish pulse deconfliction scheduling.

CHAPTER 7 INTERNATIONAL USE OF JTIDS/MIDS TERMINALS

JTIDS/MIDS equipment is used in many parts of the world. In some cases, the frequency clearance of the host country is less restrictive than the current US restrictions. Regardless of the relaxation that exists in several countries, each country also has specific restrictions that must be complied with to operate JTIDS/MIDS terminals. Respecting a country's sovereign right to limit emissions allows the continued ability to train with the allied and friendly forces with JTIDS/MIDS equipment, as well as with those countries who do not have JTIDS/MIDS terminals.

COMMON FREQUENCY CLEARANCE CRITERIA DOCUMENT

The Common Frequency Clearance Criteria Document has been adopted by numerous nations and forms the basis of their respective national JTIDS/MIDS frequency clearance. It contains JTIDS/MIDS system information, restrictions, and guidance for conducting JTIDS/MIDS operations.

Common Frequency Clearance Criteria

The following summarizes the restrictions contained in the Common Frequency Clearance Criteria Document.

- Low Power (200 watts)
- Maximum TSDF 100/50
- Standard and Packed messages allowed (258/444 pulse time slots)
- Individual Nets (different net numbers with staggered time slots assigned so time slot reuse does not occur)
- Multinet (Time slot reuse that occurs on different net numbers)
- Contention - not authorized except for Initial Net Entry and Round Trip Timing Broadcast (RTT B) transmission
- JTIDS/MIDS Geographic Area - 100 nm around each JTIDS/MIDS terminal
- EMC Features Operational - Required
- Records Maintained - 1 year

- Separation Distance - Standard ATC vertical separation = 1000 to 2000 feet (altitude dependent), co-altitude horizontal = 3 - 5 nm (altitude dependent), Ground 0.5 nm from TACAN/DME Beacon, ~900 feet from ATCRBS [Secondary Surveillance Radar (SSR)] Interrogators

- Platforms Allowed - All

Country Restrictions

The following countries have the basic Common Frequency Clearance Criteria as their JTIDS/MIDS frequency clearance: Norway, Denmark, Netherlands (Holland), Canada, Spain, Sweden and Switzerland.

The following countries also have the basic Common Frequency Criteria Clearance with the noted exception(s).

- Belgium and Luxembourg: (slightly more restrictive) Ground based JTIDS/MIDS operations must be separated at least 2 nm from the ground based ATC equipment.

- France: (slightly less restrictive) France allows for 1kw (kilowatt) output power (ground and ships only) and records need only be maintained for 30 days.

The following countries have existing JTIDS/MIDS frequency clearances that vary from the Common Frequency Clearance Criteria. Several, but not all, are expected to modify their national clearance to be commensurate with the Common Frequency Clearance Criteria in the future.

- Germany, Italy, Greece, Portugal, Turkey, United Kingdom, Iceland, Hungary, Japan, South Korea and the United States.

Table 7-1, below, provides a visual comparison of the existing JTIDS/MIDS frequency clearances in each of the countries listed.

Table 7-1 EXISTING JTIDS/MIDS FREQUENCY CLEARANCES

COUNTRY → / FUNCTION ↓	BE	DE	FR	GE	GR	HU	IT	JA	LU	NL
LOW POWER (200 watts)	★	★	★	★	★	★	★	★	★	★
MAX TSDF (100/50)	★	★	★	L	★	L	★	L	★	★
STANDARD MESSAGES (258 PULSES)	★	★	★	★	★	★	★	★	★	★
PACKED MESSAGES (444 PULSES)	★	★	★	★		★	★		★	★
MULTINET (Time Slot reuse on	★	★	★	100 NM Radius		100 NM Radius			★	★
CONTENTION (Time Slot reuse on same net)	100 NM Radius	100 NM Radius	100 NM Radius	100 NM Radius		100 NM Radius	200 NM Radius		100 NM Radius	100 NM Radius
RADIUS OF OPERATIONS	100 NM	100 NM	100 NM	50 NM		50 NM	100 NM	300 NM	100 NM	100 NM
EMC FEATURES OPERATIONAL	★	★	★	★	★	★	★	★	★	★
RECORDS MAINTAINED	★	★	★	★	★	★	★	★	★	★
SEPARATION (STD ATC As Noted)	★	★	★	★	★	★	★	L	★	★

L = OPERATIONS ★ FUNCTION 06 OCT 99

Table 7-1

EXISTING JTIDS/MIDS

FREQUENCY CLEARANCES (Continued)

COUNTRY → / ↓FUNCTION	NO	PO	SP	TU	UK	IS	CA	US	SE	SW
LOW POWER (200 watts)	★	★	★	★	★	★	★	★	★	★
MAX TSDF (100/50)	★	★	★	L	L	★	★	L	★	★
STANDARD MESSAGES (258 PULSES)	★	★	★	★	★	★	★	★	★	★
PACKED MESSAGES (444 PULSES)	★		★	★			★	★	★	★
MULTINET (Time Slot reuse on	★		★	100 NM Radius	300 NM Radius		★	★	★	★
CONTENTION (Time Slot reuse on same net)	100 NM Radius		100 NM Radius	100 NM Radius	300 NM Radius		100 NM Radius	200 NM Radius	100 NM Radius	100 NM Radius
RADIUS OF OPERATIONS	100 NM		100 NM	50 NM	300 NM		100 NM	200 NM	100 NM	100 NM
EMC FEATURES OPERATIONAL	★	★	★	★	★	★	★	★	★	★
RECORDS MAINTAINED	★	★	★	★	★	★	★	★	★	★
SEPARATION (STD ATC As Noted)	★	★	★	★	L	★	★	★	★	★

L = OPERATIONS ★ FUNCTION 06 OCT 99

NOTES 1 & 2 below apply to the UK only

Note 1:

a. No aircraft JTIDS/MIDS terminal shall radiate when:

(1) Within protected airspace.

(2) Within a slant range of 3.0 nm of a civil aircraft or a military aircraft flying under civil conditions.

(3) Within a slant range of 12.5 nm of any DME or TACAN installation promulgated in UK AIP.

b. The restrictions given in note a. (2) above may be relaxed subject to the following conditions:

(1) The total number of time slots which may be used by fixed or marine mobile MIDS/JTIDS terminals within a slant range of between 8500ft and 5.0 nm from protected airspace shall not exceed 20%.

(2) The total number of time slots which may be used by fixed or marine mobile MIDS/JTIDS terminals within a slant range of between 3500 ft and 8500 ft from protected airspace shall not exceed 10%.

(3) The above relaxations are not permitted simultaneously.

The restriction given in note a.(3) above may be relaxed as follows: the total number of time slots which may be used by an aeromobile MIDS/JTIDS terminal within a slant range of between 3.0 nm and 12.5 nm from any DME or TACAN promulgated in the UK AIP shall not exceed 20%.

Note 2

a. A fixed or maritime mobile JTIDS/MIDS terminal shall not radiate when: :

(1) Located directly under protected airspace.

(2) Within 6 nm of any SSR installation.

(3) Within 21.0 nm of any DME or TACAN installation promulgated in the UK AIP.

b. The restrictions given in Note 2, paragraph 1 above may be relaxed subject to the following conditions:

(1) The total number of time slots which may be used by fixed or marine mobile MIDS/JTIDS terminals within a slant range of between 8500ft and 5.0 nm from protected airspace shall not exceed 20%.

(2) The total number of time slots which may be used by fixed or marine mobile MIDS/JTIDS terminals within a slant range of between 3500 ft and 8500 ft from protected airspace shall not exceed 10%.

(3) The above relaxations are not permitted simultaneously.

REQUESTING FREQUENCY SUPPORT

Required Information

All units intending to operate JTIDS/MIDS equipment must obtain a frequency clearance authorization. Processing of a JTIDS/MIDS clearance outside the US & P can take as long as 120 days. The following information must be included when requesting a JTIDS/MIDS clearance. (Note: Internationally the terms "frequency assignment" and "frequency clearance" are routinely interchanged.)

- **Where** - location (e.g., Mediterranean bounded by 200 nm either side of lat/long point "A" and lat/long point "B")
- **When** - Date and time
- **Who** - POC and phone number
- **Network(s) to be used** - [e.g., JTIDS Network Library (JNL) number 24, version and network name if applicable]
- **Required TSDF** - Percentage for network and maximum for any one platform (Typically 100/50)
- **Platforms Participating** - (e.g., F-14, F-15, E-3, Aegis, E-2, CVN, CG, Patriot)
- **Stop Buzzer** - POC and 24 hour phone number
- **Crypto** - [e.g., AMST 264, Allied keymat used for European North Atlantic Treaty Organization (NATO) JTIDS/MIDS operations]
- **Times of Operation** - (e.g., 24 hours a day Zulu)

AREAS OF RESPONSIBILITY / INTEREST (AOR / AOI)

Figure 7-1 Commanders' Areas of Responsibility, is an illustration of the Combined Command's AOR and AOI. It assists in determining where to send a request for JTIDS/MIDS frequency supportability.

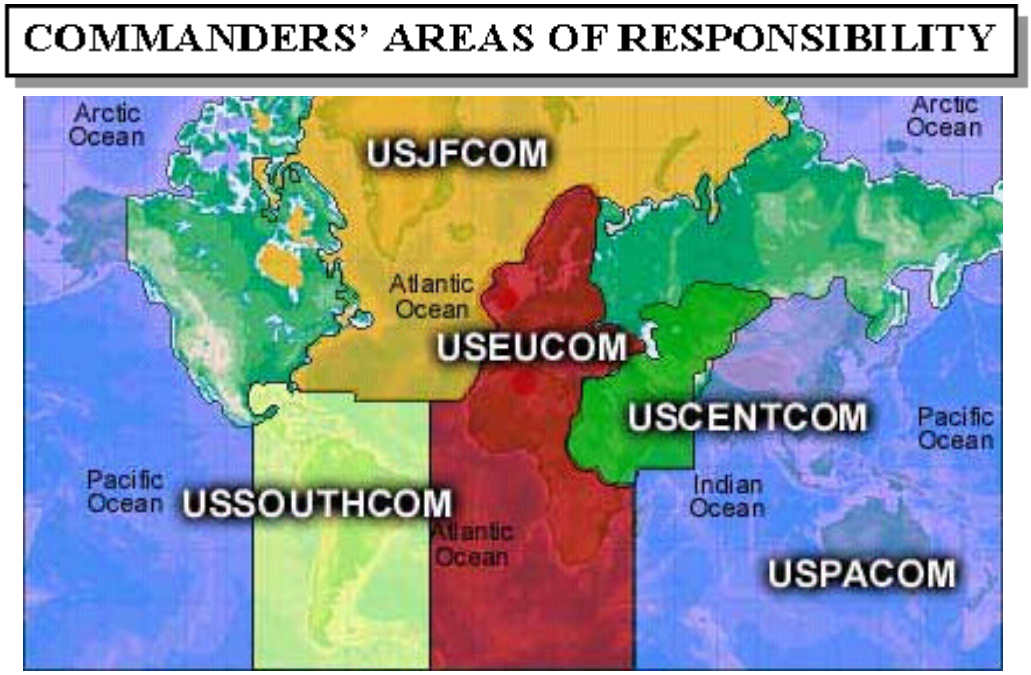


Figure 7-1 Commanders' Areas of Responsibility

UNITED STATES Joint Forces Command (USJFCOM)

Within the USJFCOM AOI JTIDS/MIDS coordination and frequency clearance support is the responsibility of the Joint Forces Command Frequency Management Office Atlantic (JFMO LANT). The specific information required by this organization is contained within the preceding section titled, "Requesting Frequency Support." Requests for JTIDS/MIDS frequency supportability in the USJFCOM AOI should be sent to the following Plain Language Addresses (PLAs).

For action:

JFMO LANT NORFOLK VA//

For information:

- SHAPE// DATA LINK MANAGEMENT AND INTEROPERABILITY CELL/SHOPC//
- NAVEMSCEN WASHINGTON DC//323/00J/00M//

UNITED STATES European Command (USEUCOM)

Request for JTIDS/MIDS frequency supportability in the European and African continent areas identified in should be sent to USEUCOM. Within USEUCOM, requests for JTIDS/MIDS frequency supportability are sent to one of the three individual Service agencies. For the Navy, it is the Commander in Chief United States Navy Europe (CINCUSNAVEUR) via the Commander Sixth Fleet (COMSIXTHFLT). For the Air Force, it is Commander in Chief United States Air Forces Europe (CINCUSAFE). For the Army, it is the Commander in Chief United States Army Europe (CINCUSAREUR). The specific requirements for these organizations are contained in the preceding section titled "Requesting Frequency Support."

CINCUSAREUR / CINCUSAFE / CINCUSNAVEUR

The information listed under the section titled "Requesting Frequency Support" preceding this section is to be forwarded to CINCUSAREUR (for the Army), Headquarters United States Air Forces Europe (HQ USAFE) (for the Air Force) or to CINCUSNAVEUR (via COMSIXTHFLT for the Navy). These organizations are the entry points for US JTIDS/MIDS operations requests. The following is the PLA for each contact point with the appropriate office / code for action and information.

For action:

- CINCUSAREUR VAIHINGEN GE//ECJ6-F/JFMOEUR//
- HQ USAFE CSS RAMSTEIN AB GE//SCOF/DOR/DOY//
- COMSIXTHFLT//N3/N312/N6/N62//
- CINCUSNAVEUR LONDON UK//N6/N631/N632/N613//

- HQ MARFOREUR BOEBLINGEN GE//G-6//

For information:

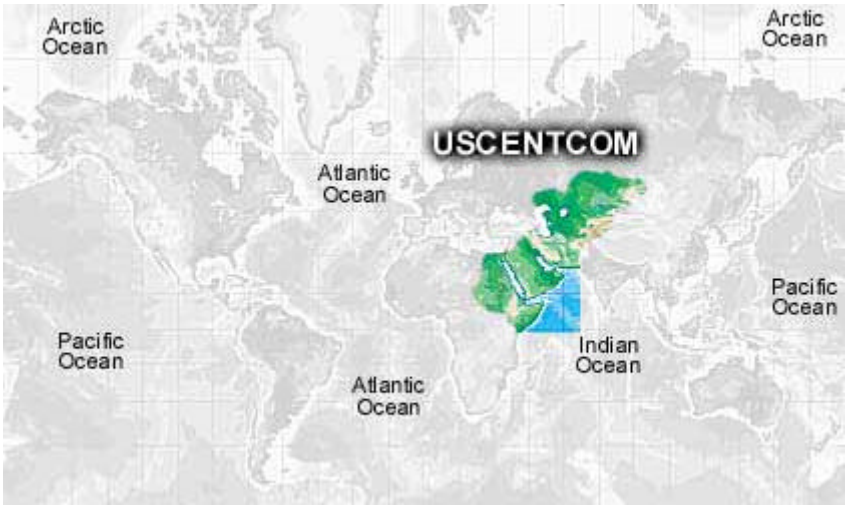
- SHAPE// DATA LINK MANAGEMENT AND INTEROPERABILITY CELL/SHOPC//
- USCINCEUR VAIHINGEN GE//ECJ6-F/JFMOEUR//
- USCINCEUR FMFO BRUSSELS BE//
- JFMO LANT NORFOLK VA//
- NAVEMSCEN WASHINGTON DC//323/00J/00M//

Supreme Headquarters Allied Powers Europe (SHAPE) Data Link Management and Interoperability Cell

SHAPE is responsible for the coordination and control of JTIDS/MIDS operations within NATO. Extensive coordination between NATO (SHAPE) and the European nations is required so JTIDS/MIDS operations adhere to the frequency clearance restrictions of all nations. Often this results in a conflict between the national requirements and those of NATO. The Common Frequency Clearance Criteria Document addresses this conflict. Should a conflict arise between national and NATO requirements for the use of JTIDS/MIDS equipment, then the requirements of the host nation take precedence. The most effective means to avoid such a situation is to coordinate and schedule effectively and efficiently. Submission of deploying force requirements to the previously mentioned respective agencies assists SHAPE in its task and enables it to better meet individual requirements. Within NATO, SHAPE is the overall coordinating authority for JTIDS/MIDS operations. SHAPE has delegated the authority to provide authorization to radiate to several Regional Link Management Cells (RLMC) throughout Europe. These units are identified when initial contact is made with SHAPE for JTIDS/MIDS frequency supportability/coordination.

UNITED STATES Central Command (USCENTCOM)

There are no countries within the USCENTCOM AOI that have a permanent JTIDS/MIDS frequency clearance. Requests for JTIDS/MIDS frequency supportability within the USCENTCOM AOI should be sent to USCINCCENT and contain the information listed in the preceding section titled "Requesting Frequency Support." The following is the PLA for each appropriate office



or code for action and information:

For action:

- USCINCCENT MACDILL AFB FL//CCJ6-COF//
- JTF-SWA//J6/JFMO//
- CDR COALITION TASK FORCE CAMP DOHA KUWAIT//C6//

For information:

- COMUSARCENT FT MCPHERSON GA//G6//AFRD-IM-PO//
- USCENTAF SHAW AFB SC//A6-SC/A6-SCX//
- COMUSNAVCENT//N6A/N61B//
- COMSOCCENT MACDILL AFB FL//SOCJ6//
- COMUSMARCENT//G6//
- CG I MEF//G-6//
- NAVEMSCEN WASHINGTON DC//323/00J/00M//

Country Restrictions

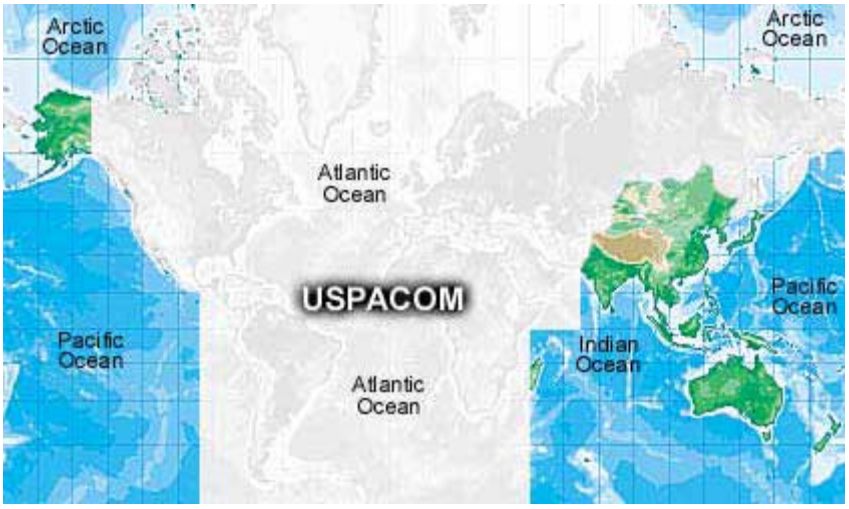
TBD

Points of Contact

TBD

UNITED STATES Pacific Command (USPACOM)

Excluding the United States and Canada, there are no countries within the USPACOM AOI with a permanent JTIDS/MIDS frequency clearance. All anticipated JTIDS/MIDS use must be requested as a temporary frequency request. The format and information required is identified in the preceding section titled "Requesting Frequency Support." The information



should be submitted to USCINCPAC.

The following is the PLA with the appropriate office / code for action and information.

For action:

- USCINCPAC HONOLULU HI//J61//

For information:

- JFMO PAC HONOLULU HI //
- NAVEMSCEN WASHINGTON DC//323/00J/00M//
- HQ PACAF HICKAM AFB HI//SCMTR//

Country Restrictions

TBD

Points of Contact

TBD

UNITED STATES Southern Command (USSOUTHCOM)

There are no countries within the USSOUTHCOM AOI (see Figure 7-1) with a permanent JTIDS/MIDS frequency clearance. All anticipated JTIDS/MIDS use must be requested as a temporary frequency request. The format and information required is identified in the preceding section titled "Requesting Frequency Support." The information should be submitted to the United States Commander in Chief Southern Command (USCINCSOUTH).

The following is the PLA with the appropriate office / code for action and information.

For action:

- USCINCSOUTH/

For information:

- NAVEMSCEN WASHINGTON DC//323/00J/00M//
- HQ 12AF DAVIS-MONTHAN AFB AZ//SCXPF//

Country Restrictions

TBD

Points of Contact

TBD

CHAPTER 8 REFERENCE DOCUMENTATION

Chairman Joint Chiefs of Staff Instruction (CJCSI) 6232.01A

This instruction implements policy ensuring JTIDS/MIDS equipment use does not exceed pulse density limitations specified by NTIA restrictions and subsequent US Military Communications Electronics Board (MCEB) guidance. The instruction applies to all units operating JTIDS/MIDS equipment in the proximity of the US & P. It provides the policy, definition, procedures, and organizational responsibilities to manage JTIDS/MIDS use through the control, monitoring, supervision, and management of pulse densities, referred to as pulse deconfliction. Download this CJCSI from the Joint Electronic Library on the Defense Technical Information Center (DTIC) website (http://www.dtic.mil/doctrine/jel) or request copies from:

The Joint Chiefs of Staff J-6 Room 1E833
The Pentagon
Washington D.C. 20318-6000

NTP- 6

Containing the guidance for spectrum management within the Navy, this document identifies the chain of command, organization responsibilities, Geographic Areas of responsibility, and direction for completing the Defense Department (DD) Form 1494 and Standard Frequency Action Form (SFAF). Requests should be sent to the nearest installation frequency manager.

AFI 33-118, Radio Frequency Spectrum Management

Air Force Instruction (AFI) 33-118, Radio Frequency Spectrum Management, identifies responsibilities for Air Force management of the Radio Frequency (RF) spectrum and provides procedures for implementing its use. The Air Force Frequency Management Agency is the controlling authority for this publication, and it is available through the SAF/ADD web site (http://afpubs.hq.af.mil).

AFM 33-120 Radio Frequency Spectrum Management

Air Force Manual (AFM) 33-120 assists in system planning, explains how to obtain frequency support for new radio frequency (RF) systems, and lists detailed procedures for frequency allocations and assignments. It also provides guidance in completing and processing a frequency request using the Standard Frequency Action Form (SFAF). The Air Force Frequency Management Agency is the controlling authority for this document, and it is available through the SAF/ADD web

site (http://afpubs.hq.af.mil).

AR 5-12 Army Management of the Electromagnetic Spectrum

The Army's spectrum management guide is the Army Regulation (AR) 5-12,, Army Management of the Electromagnetic Spectrum.

Allied Data Link Publication 16 (ADatP 16)

ADatP 16 is a two-volume publication with information for conducting successful Link 16 operations within the allied community. Topics range from detailed procedures on network establishment to design and message interoperability tables. It reflects the most current fielding of Link 16 equipment in the NATO countries. The document is configuration managed by the Data Link Working Group AC/322 (SC/5-WG/1*)* in Brussels, Belgium. Requests can be made to:

NATO Headquarters, attention C3S/IOB
Brussels, Belgium B-1110

Allied Command Europe (ACE) Data Link Planning and Employment Guide

The ACE Data Link Planning and Employment Guide is an operational level planning document for conducting data link operations in NATO. It contains much of the information the previously mentioned documents contain, but it is condensed and written from an operational viewpoint. The document focuses on vital E-3 and NATO ground environment requirements. It also provides the scope and the resources available for conducting successful Link 11, Link 4 and JTIDS operations. Day-to-day JTIDS training networks and specific guidelines on host country restrictions and procedures are discussed. In addition, it contains the latest version of the Operational Tasking Link (OPTASK LINK) format used in NATO, complete with field descriptions and examples. Requests for the ACE Data Link Planning and Employment Guide can be made to:

SHAPE Data Link Management and Interoperability Cell (SHOPC)
Mons, Belgium 7110.

ORGANIZATIONS / POINTS OF CONTACT

PMW-159

PMW-159, the Program Manager for Advanced Tactical Data Links, is the Office of the Assistant Secretary of Defense (OASD), Command, Control, Communications, Computers and Intelligence (C4I) Department of Defense designated lead service for Link 16. PMW-159 is responsible for coordinating and spearheading the DOD's Link 16 spectrum certification and management programs. The point of contact for Link 16 spectrum related issues within PMW-159 is code/office symbol PMW-159-21A. Phone: DSN: 524-7715, commercial: (619) 524-7715.

Naval Electromagnetic Spectrum Center (NAVEMSCEN)

NAVEMSCEN is the DOD Single Point of Contact for JTIDS/MIDS spectrum management issues. In this capacity, NAVEMSCEN coordinates directly with the FAA for frequency management support for the operations community. Each of the Service frequency management offices (AF FMA and CE Services) coordinates its JTIDS/MIDS requirements with NAVEMSCEN prior to any coordination with the FAA. All Joint, combined and exercise requirements go through NAVEMSCEN. Direct liaison with the FAA is not authorized. The focal point for JTIDS/MIDS within NAVEMSCEN is code/office symbol 323; (e-mail: downiet@navemscen.navy.mil); Phone: DSN 221-2750, Commercial (703) 325-2750. Fax (703) 325-2614.

Air Force Frequency Management Agency (AF FMA)

AF FMA provides the Air Force with frequency management support for Air Force operations. It coordinates Air Force JTIDS/MIDS operations requirements through NAVEMSCEN and obtains the necessary frequency assignments for Air Force organizations. The focal point for JTIDS/MIDS within AF FMA is office symbol SCM (e-mail: edward.wickenhofer@pentagon.af.mil); Phone: DSN 226-1539, Commercial (703) 428-1539.

Army Communications Electronics Services

The Army CE Services furnishes the Army with frequency management support for Army operations. Army CE Services coordinates Army JTIDS/MIDS operations requirements through NAVEMSCEN and obtains the necessary frequency assignments for Army organizations. The focal point for JTIDS/MIDS within the Army is the office symbol SCMO/C (e-mail: weaverA@hqda.army.mil); Phone commercial (703) 325-8213.

Joint Frequency Management Offices

There are three JFMOs: one for the Atlantic (JFMO LANT), one for the Pacific (JFMO PAC) and one for Europe (JFMO EUR). These organizations handle the Joint JTIDS/MIDS frequency issues of the operational community.

Navy Network Design Facility

The Navy Network Design Facility (USN NDF) is located at NCTSI in San Diego, California. The Chief of Naval Operations (CNO) has assigned the Navy Center for Tactical Systems Interoperability (NCTSI) responsibility for the operation, maintenance, and management of the Navy Network Design Facility. NCTSI coordinates with other Navy/Joint/Allied commands, as required, for network design requirements and network design configuration management issues. The USN NDF phone numbers are DSN 553-9115, commercial (619) 553-9115. The e-mail address is navy_ndf@nctsi.spawar.navy.mil

The mailing address is:

Navy Center for Tactical Systems Interoperability (NCTSI), Code N6
53690 Tomahawk Dr., Suite A125
San Diego, CA 92147-5082

Air Force Network Design Facility

The Air Force JTIDS/MIDS Network Design Facility (AF NDF) is located at Langley AFB, Virginia, in the Air Combat Command (ACC) Aerospace Operations Directorate, Battle Management Operations Division. The AF NDF provides support to the Combat Air Forces (CAF) for JTIDS/Link 16 network design, management, and training. It also supports operational commanders directing contingency operations, exercises, testing, and training activities as well as functioning as the POC and releasing authority for Air Force JTIDS Crypto Keys. The AF NDF is the POC for the AF JTIDS web page which provides on-line support for unit JTIDS/Link 16 operations. The web site address is http://totn.do.langley.af.mil.

In addition to contact through the web page, the AFJNDF phone numbers are commercial (757) 764-8328/9 or DSN 574-8328/9. Fax (757) 764-8460 or DSN 574-8460. The e-mail address is af.jtids@langley.af.mil.

The mailing address is:

HQ ACC/XOYJ
205 Dodd Blvd., suite 101
Langley AFB, VA 23665

Army Network Design Facility

The Army NDF has been established to ensure Army JTIDS networks and platform initialization files are designed, validated, published, and maintained for Army unique and Joint, Combined, or Coalition operations which include Army JTIDS/MIDS equipped platforms. The official Army JTIDS/MIDS web site is: http://jtids.sed.redstone.army.mil

The Army NDF is divided into two components. The Army Air & Missile Defense Network Design Facility (AAMDNDF), located at Redstone Arsenal, AL, performs technical functions such as JTIDS network design and initialization file generation. The 32d Army Air & Missile Defense Command (AAMDC) JTIDS Network Support Cell (JNSC), located at Ft. Bliss, TX handles operational and logistical issues, and serves as the Army NDF's interface to the user.

The PLAD is: "RUERNUB/CDR32DAAMDC FT BLISS TX//AFVL//"

Emails are garciam@emh10.bliss.army.mil and hills@emh10.bliss.army.mil SIPRNET email is aamdc1@blissdms.army.smil.mil.

E-mail addressed to AAMDNDF@sed.redstone.army.mil will be received by both the JNSC and the AAMDNDF. In addition, the POC for both organizations is:

Commander

32d AAMDC
ATTN: AFVL-IS (G6, JNSC)
111 Slater Road
Fort Bliss, TX 79916-6816
DSN is 978-3323/3498 or Commercial is (915) 568-3323/3498

AAMDNDF
CDR AMCOM
ATTN: AMSAM-RD-BA-C3I (JTIDS)
Bldg. 6260
Redstone Arsenal, AL 35898-5260
DSN 746-4928 or COM (256)876-4928

Marine Corps Network Design Facility

The Marine Corps network design facility is the Marine Corps Tactical Systems Support Activity (MCTSSA) which is located at Camp Pendleton, California. Network management in the Marine Corps follows the basic four steps of the joint network management process. Network design will be performed primarily at the Marine Corps network design facility. Network design will be performed at the Marine Air Ground Task Force (MAGTF) staff level only as necessary to support dynamic operational scenarios that cannot be accomplished at the Service facility.

The mailing address is:

MCTSSA
Attn: ADSD AD-09
Box 555171
Camp Pendleton, CA 92055-5171

JTIDS Network Design Library (JNDL)

The JNDL, located at Ft. McPherson, Georgia, maintains a library of all JTIDS/MIDS/Link 16 networks authorized for use by U.S. Forces. The library includes both service and joint networks. The JNDL stores two copies of all network designs at the JNDL facility and maintains a network history (use) file on each of the joint networks. The JNDL also supports an archival file, which contains current and previous versions of all JTIDS/MIDS/Link 16 networks. The Joint JTIDS/MIDS/Link 16 Network Catalog is supported. The JNDL distributes the catalog to Service NDFs, Specified, Unified and Combined Commands, and to other agencies requiring JTIDS/MIDS/Link 16 operational support. The catalog provides network descriptions for all networks distributed for use. When required or requested each service NDF provides the JNDL with catalog information updates in accordance with Joint Network Design Guide (JNDG) and JTIDS/MIDS Network Catalog instructions. The phone numbers are; DSN 367-3136, Commercial (404) 464-3136, Secure: DSN 367-4616 and after duty hours: DSN 367-5222. The mailing address is:

Deputy Chief of Staff for Operations

ATTN: AFOP JT JNDL
US Army Forces Command
1777 Hardee Ave. SW
Fort Mcpherson, GA 30330-1062

CHAPTER 9 DESIGNATED SERVICE COORDINATORS

The following list identifies the Service coordinators who schedule JTIDS/MIDS activity. It is not all inclusive since many organizations are just beginning to handle this responsibility. Users should verify their coordination through the JNDL deconfliction server. For the most current list of designated Service coordinators, refer also to the JNDL web server address provided: (http://jndl.forscom.army.mil)

NAVY

The Navy has instituted a Geographic Area Assignment Coordinator (GAAC) concept as its Service Designated Coordinator. These identified agencies are responsible for accomplishing the duties and responsibilities specified in Chapter 6 of this guide and the CJCSI 6232.01A.

West Coast

CINCPACFLT CMD Center (Local)

PLA: CINCPACFLT PEARL HARBOR HI
Office Code: N66/N63/N62/N3
POC: Staff Duty Officer
Tel: (808) 471-3201
Fax: (808) 653-0113

FACSFAC San Diego (Lead)

PLA: FACSFAC SAN DIEGO CA
Office Code: N3
POC: Beaver Control
Tel: (619) 545-1742/1780
Fax: (619) 545-1778

FACSFAC Pearl Harbor (Local)

PLA: FACSFAC PEARL HARBOR HI
Office Code: N3/N33
POC: Hula Dancer
Tel: (808) 472-7330/8669
Fax: (808) 472-7317

NAVSHIPYD Puget Sound (Local)

PLA: NAVSHIPYD PUGET SOUND WA
Office Code: 1125.2
POC: Mr. Ronald Cammers
Tel: (206) 476-5053
Fax: (206) 476-8449

NAVCOMTELSTA Guam (Lead)

PLA: NAVCOMTELSTA GUAM GU
Office Code: N351
POC: N351
Tel: DSN(315) 355-5260
Fax: (671) 355-5125

NAS Fallon (Lead)

PLA: NAVSTKAIRWARCEN FALLON NV
Office Code: N8C1
POC: Mr. Randy Shepherd
Tel: (702) 426-3778
Fax: (702) 426-2165 (unclassified)
Fax: (702) 426-3778 (classified)

MCAS Yuma (Lead)

PLA: MAWTS ONE YUMA AZ
Office Code: C-3
POC: C-3
Tel: (520) 341-3623
Fax: (unclassified)
Fax: (classified)

East Coast

FACSFAC VACAPES

PLA: FACSFAC VACAPES OCEANA VA
Office Code: N32
POC: N32
Tel: (757) 433-1220

Fax: (757) 433-1266 (unclassified)
Fax: (classified)

FACSFAC Jacksonville

PLA: FACSFAC JACKSONVILLE FL
Office Code: N32
POC: N32
Tel: (904) 542-2025
Fax: (904) 542-2525 (unclassified)
Fax: (classified)

FACSFAC AFWTF Puerto Rico

PLA: AFWTF ROOSEVELT ROADS PR
Office Code: 96/92
POC: 96/92
Tel: (787) 865-3319
Fax: (unclassified)
Fax: (classified)

ARMY

White Sands Missile Range (WSMR)

PLA: DOD AFC WSMR
Office Code:
POC: Frequency Manager
Tel: (505) 678-5417
Fax: (unclassified)
Fax: (classified)

National Training Center (NTC) FT Irwin

PLA: CDR NTC FT IRWIN CA
Office Code: AFZJ-PTS
POC: Frequency Manager
Tel: (760) 380-3043
Fax: (760) 380-4897 (unclassified)

MARINE CORPS

PLA: MCTSSA Camp Pendleton CA//ADSD/AD-09//
Office Code: ADSD
POC: Daniel Nygren
Tel: DSN 365-2585 Commercial 760-725-2585
Fax: DSN 365-9512 Commercial 760-725-9512
Fax: (classified) N/A

AIR FORCE

In addition to a current list of service coordinators maintained by the JNDL, a list of wing/unit managers and deconfliction coordinators is also supported on the AF web page, which is updated by the Air Force JTIDS/MIDS Network Design Facility.

CHAPTER 10 FREQUENTLY ASKED QUESTIONS

1. What is a JTIDS/MIDS frequency clearance?

A frequency clearance is an authorization to use a RF device (in this case a JTIDS/MIDS terminal) within certain constraints as determined by the IRAC and the Frequency Assignment Subcommittee (FAS).

2. What is a frequency assignment, and where should the JTIDS/MIDS assignment request be submitted?

A frequency assignment is permission for authorized equipment to radiate at a specific frequency or within a frequency band. For the Air Force, the frequency assignment request is made by the organization using Link 16 through the installation spectrum manager responsible for the area in which the network is operated. In the Army, the request is submitted to the post frequency manager, who then sends it directly to Army Communications Electronics Services. For the Navy, the request is submitted through the base or installation frequency manager to the regional Area Frequency Coordinator, with an information copy to the respective Commander in Chief Atlantic / Commander in Chief Pacific, deconfliction coordinator and Naval Electromagnetic Spectrum Center. For non-US JTIDS/MIDS platforms operating within the US & P, requests need to be forwarded to the hosting US Service, and the host Service then follows the respective steps previously mentioned.

3. What is the difference between a temporary and a permanent JTIDS/MIDS frequency assignment?

In spectrum management there are two types of frequency assignments. The first is a temporary assignment, which is usually limited in duration (typically 90 days or less). The second is a permanent assignment, which is valid for a period of five years. However, permanent JTIDS assignments have been granted for periods of two years only and, thus, are not actually "permanent" frequency assignments. Permanent assignments must be renewed, and no notification is provided when they are about to expire. Temporary JTIDS assignments are used for specific exercises or testing and are usually short in duration

4. What information is needed for a JTIDS/MIDS frequency assignment?

As a minimum, the following information needs to be provided. (Note that the required information for international use of JTIDS/MIDS is contained in Chapter 7.)

Where - location (e.g., Warning / restricted / Airborne Early Warning orbit areas or the lat/long values for a specific Geographic Area)

Who - POC and phone number

When - Duration (dates and Zulu time)

Note: The "when" and "where" should be loosely tied together to facilitate more effective pulse deconfliction (e.g., point "A" to point "B" within 100 nm either side, 26 - 28 February. This keeps the request at the UNCLASSIFIED level).

Required Time Slot Duty Factor - percentage for network and maximum for any one platform (100/50)

Stop Buzzer - 24-hour POC name and number

Platforms participating - (e.g., F-14, F-15, E-3, Aegis, Patriot)

JTIDS/MIDS Voice - Requirement and justification

Proximity to Mode S Sensors, ATCRBS Interrogators, and TACAN/DME beacons - If applicable. (This is only required if a unit is not able to meet the separation distances contained in Table 4-1 of this guide.)

Deconfliction Scheduling Number - (e.g., 2000-03-09 18:31:05)

5. As part of a team supporting the program manager for a new weapons system, is there anything special that needs to be known and/or done before testing and fielding begins?

Yes. It is the responsibility of the program manager to complete the Defense Department (DD) Form 1494 for JTIDS/MIDS use. This form contains critical information required by NTIA and FAA for operation in the 960 - 1215 MHz band. Information on the basic terminal functionality may not be required if it was provided when the JTIDS/MIDS paperwork for the terminal was originally submitted. What is required, however, is the specific platform information when it is equipped with a JTIDS/MIDS terminal. This includes antenna type (nomenclature), the main beam gain as well as the 3 dB beamwidth points in elevation and any loss between the JTIDS/MIDS terminal output port and the antenna. This information should be provided to NAVEMSCEN, so the DD Form 1494 can be updated. Barring any unforeseen problems, this permits your platform to operate in the US & P with an approved frequency assignment and in those countries to which the release of the information contained in the DD Form 1494 is authorized.

6. When is it necessary to initiate a JTIDS/MIDS frequency assignment request?

Assignments are issued in several formats. The most common are by Geographic Area and the other is by a fixed location unit (fixed single point latitude and longitude versus a large Geographic Area such as a warning area). If an assignment exists in the intended area of operations then it may be possible to operate JTIDS/MIDS terminals under the existing assignment providing the mission requirements do not exceed that area's authorization. If the requirements exceed the assignment, then a temporary frequency assignment request must be submitted. If the mission is within the area authorization under a fixed point assignment, then operations are bounded by the rules governing that specific fixed point (i.e., the existing frequency assignment).

7. Who needs to be contacted to find out if a JTIDS/MIDS frequency clearance exists in the intended Operations Area?

The Service designated deconfliction coordinator for that area is the first point of contact. If the coordinator cannot provide an answer, then the base or installation frequency manager should have the information. Refer to Chapters 4 or 7 in this guide for further guidance, if needed.

8. What is the Service designated deconfliction coordinator's responsibility, and why does one need to coordinate efforts?

The Service designated deconfliction coordinator provides a vital service for DOD to ensure compliance with the national JTIDS/MIDS frequency clearance. The coordinators are schedulers of the space and time in which JTIDS/MIDS equipment operates. During this process, the coordinator monitors the scheduled TSDF for a particular area, ensuring it does not exceed the permitted frequency assignment level. Scheduling with the coordinator is mandatory and centralizes the coordination required to use JTIDS/MIDS equipment within a specific Geographic Area.

ACRONYM LIST

Acronym	Definition
AAMDNDF	Army Air and Missile Defense Network Design Facility
ACC	Air Combat Command
ACE	Allied Command Europe
ADA	Air Defense Artillery
ADatP 16	Allied Data Link Publication 16
ADCP	Air Defense Communication Platform
AEW	Airborne Early Warning
AF FMA	Air Force Frequency Management Agency
AF NDF	Air Force JTIDS/MIDS Network Design Facility
AFC	Area Frequency Coordinator
AFI	Air Force Instruction
AFM	Air Force Manual
AFWTF	Atlantic Fleet Weapons Test Facility
AMDPCS	Air and Missile Defense Planning and Control System
AOC	Air Operations Center
AOI	Areas of Interest
AOR	Areas of Responsibility
ASIT	Adaptable Surface Interface Terminal
ATC	Air Traffic Control
ATCRBS	Air Traffic Control Radar Beacon System

Acronym	Definition
ATDL	Advanced Tactical Data Link
AWACS	Airborne Warning and Control System (E-3)
B-1B	Bomber Aircraft
BE	Belgium
C/S/A	Commander in Chiefs/Services/Agencies
C-130	Test Platform for Airborne Terminal Testing
C2ISR	Command and Control, Intelligence, Surveillance and Reconnaissance
C4I	Command, Control, Communications Computers and Intelligence
CA	Canada
CAF	Combat Air Forces
CE	Communications Electronics
CG	Guided Missile Cruiser
CGN	Guided Missile Cruiser, Nuclear
CINCLANT	Commander in Chief Atlantic
CINCPAC	Commander in Chief Pacific
CINCs	Commander in Chiefs
CINCUSAFE	Commander in Chief United States Air Forces Europe
CINCUSAREUR	Commander in Chief United States Army Europe
CINCUSNAVEUR	Commander in Chief United States Navy Europe
CIT	Combined Interrogator Transponder
CJCS	Chairman, Joint Chiefs of Staff
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CLASS	Classified
CNO	Chief of Naval Operations
COMSIXTHFLT	Commander Sixth Fleet

Acronym	Definition
COMSOCCENT	Commander Special Operations Command Central
COMUSARCENT	Commander United States Army Central Command
COMUSMARCENT	Commander United States Marines Central Command
COMUSNAVCENT	Commander United States Navy Central Command
CRC	Control and Reporting Center
CRE	Control and Reporting Element
Crypto	Cryptographic
CV	Multipurpose Aircraft Carrier
CVN	Nuclear Aircraft Carrier
dB	Decibel
dBm	Decibels Relative to a Milliwatt
DE	Denmark
DME	Distance Measuring Equipment
DME/N	Conventional Distance Measuring Equipment
DME/P	Precision Distance Measuring Equipment
DOD	Department of Defense
DSN	Digital Switching Network
E-2	Airborne Early Warning Aircraft (HAWKEYE)
E-3	Airborne Warning And Control System (SENTRY)
E-8	Joint Surveillance Target Attack Radar System (JSTARS)
EC-130	Airborne Battlefield Command & Control Center (ABCCC)
EMC	Electromagnetic Compatibility
EW	Electronic Warfare
F/A-18	Fighter/Attack Aircraft (HORNET)
F-14	Air Superiority Aircraft (TOMCAT)
F-15	Air Superiority Aircraft (EAGLE)

Acronym	Definition
F-16	Fighter Aircraft (FALCON)
FAADC^{2}I	Forward Area Air Defense Command, Control and Intelligence (now know as SHORAD)
FACSFAC	Fleet Area Control Surveillance Facility
FDL	Fighter Data Link (MIDS v3)
FAS	Frequency Assignment Subcommittee
FR	France
G-1	Gulfstream aircraft
GAAC	Geographic Area Assignment Coordinator
GE	Germany
GR	Greece
HQUSAFE	Headquarters United States Air Forces Europe
ICAO	International Civil Aviation Organization
IFF	Identification Friend or Foe
IJMS	Interim JTIDS Message Specification
IPF	Interference Protection Features
IRAC	Interdepartment Radio Advisory Committee
IS	Iceland
IT	Italy
JCS	Joint Chiefs of Staff
JDS	JTIDS Deconfliction Server
JFMO	Joint Frequency Management Office
JLENS	Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System
JM	JTIDS Module
JNDL	JTIDS Network Design Library
JSC	Joint Spectrum Center

Acronym	Definition
JTAGS	Joint Tactical Ground Station
JTD	JTIDS Test Device
JTF	Joint Task Force
JTIDS	Joint Tactical Information Distribution System
JVAN	JTIDS Van
LANT	Atlantic
Lat/Long	Latitude/Longitude
LOS	Line of Sight
LU	Luxembourg
LVT	Low Volume Terminal (MIDS v1)
MACS	Marine Air Command and Control Squadron
MAGTF	Marine Air Ground Task Force
MAJCOM	Major Command
MAWTS	Marine Air Wing Training Squadron
MCE	Modular Control Equipment
MCE/JM	Modular Control Equipment/JTIDS Module
MCEB	Military Communications Electronics Board
MCTSSA	Marine Corps Tactical Systems Support Activity
MEADS	Medium Extended Air Defense System
MHz	MegaHertz
MIDS	Multifunctional Information Distribution System
Mode S	Mode Select
ms	Milliseconds
MSEC	Message Security
MSN MGT	Mission Management
NATO	North Atlantic Treaty Organization

Acronym	Definition
NAVCOMTELSTA	Navy Computer and Telecommunications Station
NAVEMSCEN	Naval Electromagnetic Spectrum Center
NAVSHIPYD	Navy Shipyard
NAVSTKAIRWARCEN	Naval Strike Air Warfare Center
NCTSI	Navy Center for Tactical Systems Interoperability
NDF	Network Design Facility
NL	The Netherlands
nm	Nautical Mile
NO	Norway
NPG	Network Participation Group
NTC	National Training Center
NTIA	National Telecommunications and Information Administration
OASD	Office of the Assistant Secretary of Defense
OP Areas	Operations Areas
OPFAC	Operations Facility
OPTASK LINK	Operational Tasking Link
P-3	Maritime Surveillance Aircraft (ORION)
PEO-SCS	Program Executive Officer for Space, Communications and Sensors
PLA	Plain Language Address
PMW-159	Navy Advanced Tactical Data Links Office
PO	Portugal
POA&M	Plan of Action and Milestones
PPLI	Precise Participant Location and Identification
RC-135	Reconnaissance Aircraft (RIVET JOINT)
RCCS	Radio Commission Conference Subcommittee
RLMC	Regional Link Management Cell

Acronym	Definition
RLOS	Radio Line-of-Sight
RTT-A	Round Trip Timing-Address
RTT-B	Round Trip Timing-Broadcast
SAF	Secretary of the Air Force Office
SE	Sweden
SFAF	Standard Frequency Action Form
SH-60	Helicopter
SHAPE	Supreme Headquarters Allied Powers Europe
SHORAD	Short Range Air Defense
SJS	Shelterdized JTIDS System
SOCAL	Southern California
SP	Spain
SPS WG1	Spectrum Planning Subcommittee Working Group One
SSC SD	SPAWAR System Center San Diego
SSN	Submarine, Nuclear
SSR	Secondary Surveillance Radar
STANAG	NATO Standardization Agreement
TACAN	Tactical Air Navigation
TADIL	Tactical Digital Information Link
TADIL J	Tactical Digital Information Link - JTIDS
TAOC	Tactical Air Operations Center
TAOM	Tactical Air Operation Module
TCAS	Traffic Alert and Collision Avoidance System
THAAD	Theater High Altitude Area Defense
TSC-131	JTIDS Shelter Platform
TSDF	Time Slot Duty Factor

Acronym	Definition
TSEC	Transmission Security
TSR	Time Slot Reallocation
TU	Turkey
TYQ-82	Marine Ground Station used with TAOM
UAV	Unmanned Air Vehicle
UK	United Kingdom
UNCLAS	Unclassified
US	United States
US & P	United States & Possessions
USCENTCOM	United States Central Command
USCENTCOM	United States Central Command
USCINCCENT	United States Commander in Chief Central Command
USCINCSOUTH	United States Commander in Chief Southern Command
USEUCOM	United States European Command
USEUCOM	United States European Command
USG-48	ABCCC Ground Based Capsule
USJFCOM	United States Joint Forces Command
USCINCPAC	United States Commander in Chief Pacific Command
USPACOM	United States Pacific Command
USPACOM	United States Pacific Command
USSOUTHCOM	United States Southern Command
WSMR	White Sands Missile Range